

**SUPPORT OF THE ANNUAL
“TECHNOBRAIN” COMPETITION**



**TECHNION – ISRAEL INSTITUTE OF TECHNOLOGY
DIVISION OF PUBLIC AFFAIRS AND RESOURCE DEVELOPMENT
OCTOBER 2003**

Executive Summary

Science and technology have repeatedly changed the course of civilization. The Technion has exercised a decisive influence upon the development of the pre-state Jewish community and the creation of the economic infrastructure upon which the State was established in 1948. Its tens of thousands of graduate engineers and scientists continue to mould the physical character of the State.

The Technion is seeking to foster the intellectual talents and encourage imaginative solutions of its students. In 1997, Neev-Ya Durban, then a second-year student in the Technion's Faculty of Aerospace Engineering, initiated and supervised the organization of the **"EggCopter" Competition**, an event that aroused tremendous national and international interest and generated remarkable publicity for the Technion. Two years later, he initiated and organized the **"CandleMobile" Competition**.

The success of these events, combined with the Technion's desire to comply with Neev-Ya's wish to have this marvelously creative activity become an annual Technion tradition, has prompted the Technion to formally establish the **"TechnoBrain" Competition**. This unique competition will have a multiple objective: to inspire students to new levels of creativity and imagination, to enliven the Technion campus with an unusual, enjoyable and entertaining activity, and to add a different color to science.

Contribution required: a \$100,000 endowed fund, the fruits of which would guarantee the regular organization and proper publicizing of the **"TechnoBrain" Competition** on an annual basis, in perpetuity.

The Power of Technology

Science and technology have repeatedly changed the course of civilization. Since early man forged primitive tools in order to improve his ability to survive and better forage for food, through the invention of the wheel, the design of the steam engine and the quantum leap engendered by the industrial revolution society has forged ahead thanks to innovative thinking and the exploitation of science and technology. In the modern era, the technique of miniaturization and nano-technologies and the revelations of bio-sciences offer mankind's greatest hopes for benefiting modern civilization.

The modern world is undergoing a revolution in both industrial productivity as well as domestic devices, which are influencing human welfare and social practices. Computer science and bio-sciences, when applied to communications and information technology, open new vistas for nations in terms of both the well-being of their citizens as well as defensive capabilities, energy conservation and industrial expansion.

Brainpower's Influence on Israel

Since the second quarter of the last century, when the Technion first opened its portals to students, the skills and techniques fostered and developed in the course of their studies at the Technion exercised a decisive influence upon the development of the pre-state Jewish community and the creation of the economic infrastructure upon which the State was established in 1948. Since then, its tens of thousands of graduate engineers and scientists have continued to mould the physical character of the State and the ensure Israel's scientific deterrent capabilities enabling it to withstand the hostility of its neighbors.

Today, in most industries in Israel, the vast majority of engineers employed and involved in research and development efforts are graduates of Technion's engineering faculties.

Technion and Creativity

Throughout Technion's faculties and departments, faculty members are pursuing cutting-edge research and teaching students basic engineering and technological skills. At the same time, they are seeking to foster the intellectual talents and encourage creative and imaginative solutions of their young protégés.

Technion's students of today will serve as the captains of Israel's industries of tomorrow and pioneer the next generation of entrepreneurial enterprises.

The Incredible Prospects of Creative Imagination

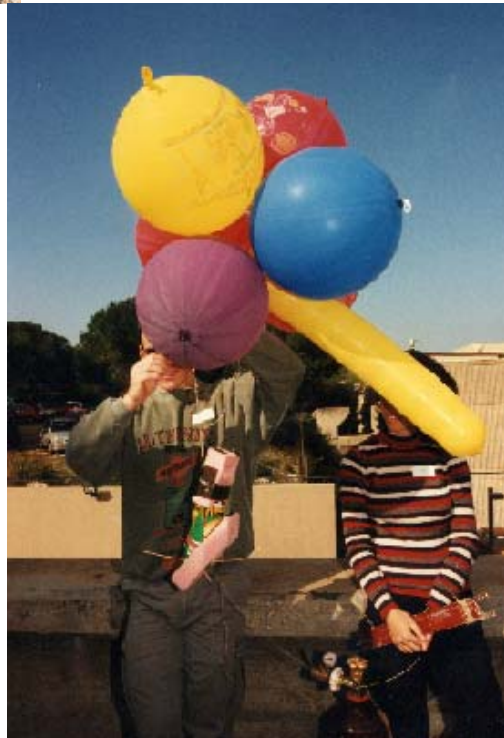
In 1997, Neev-Ya Durban, then a second-year student in the Technion's Faculty of Aerospace Engineering, initiated and helped organize the "EggCopter" competition. The object of the competition was to find the student or group of students who would design and construct the mechanism that would parachute a fresh egg, in the swiftest possible time, from the top of one of Technion's highest buildings – a height of 50 meters – to the ground, and land – intact. A hundred competitors, utilizing a plethora of techniques ranging from umbrellas to missiles in a huge variety of cushioning containers, participated. Fifteen eggs landed intact and the event was won by a balloon containing a jar of apricot jam in which the egg was embedded attached to a miniature missile. It landed in one second, the jam jar burst and one second later the egg rolled out – all in one piece.



Yair Solomon, first place winner of the "EggCopter" Competition.



Other innovative "EggCopter" entries



A long way down from atop the 50-meter high Amado Mathematics Building.



This event aroused tremendous interest and generated remarkable publicity for the Technion in the media both in Israel and abroad.

"It was pure scientific fun," enthused Durban, who believed that the competition was such a positive event that it would become an annual Technion tradition. "It was no joke, but a learning experience; techniques used to land a space vehicle on the moon were used here."

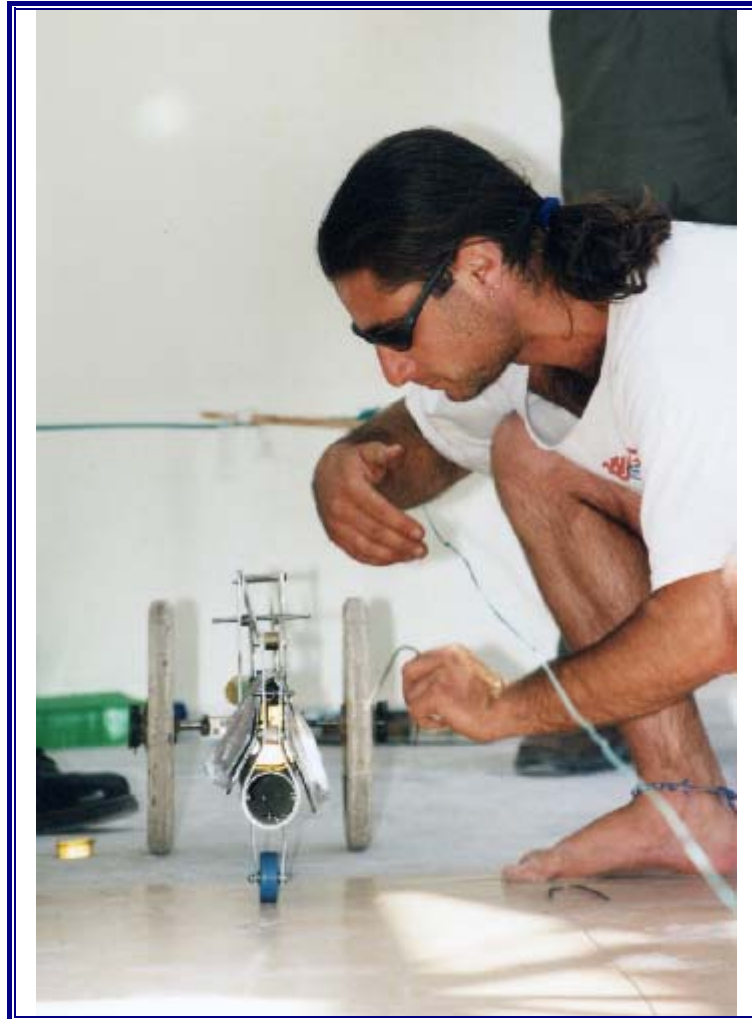
Neev-Ya Durban had already evinced an interest and talent in building and launching gliders and in robotics while still in high school. After graduating he enrolled in Technion's Faculty of Aerospace Engineering in the framework of the Israel Defense Force's academic reservists program. Intellectually bright, he helped finance his studies by working as a gardener and giving private physics and mathematics lessons. He was also socially active and ever-popular, as demonstrated by his election as student representative of his year, his service on the Faculty Council, his writing for the student newspaper and participation in the student theater.

Two years later Neev-Ya Durban conceived of and organized the second "TechnoBrain" competition: the design of a vehicle propelled by a single energy source – a pair of Sabbath candles. The vehicle had to reach the finish line in one piece, with nothing but a trail of dripping wax in its wake. The 12 Technion students who competed in the "CandleMobile" competition once again drew an enthusiastic student audience, garnering high praise for creativity from the panel of judges and a great deal of publicity for the Technion.

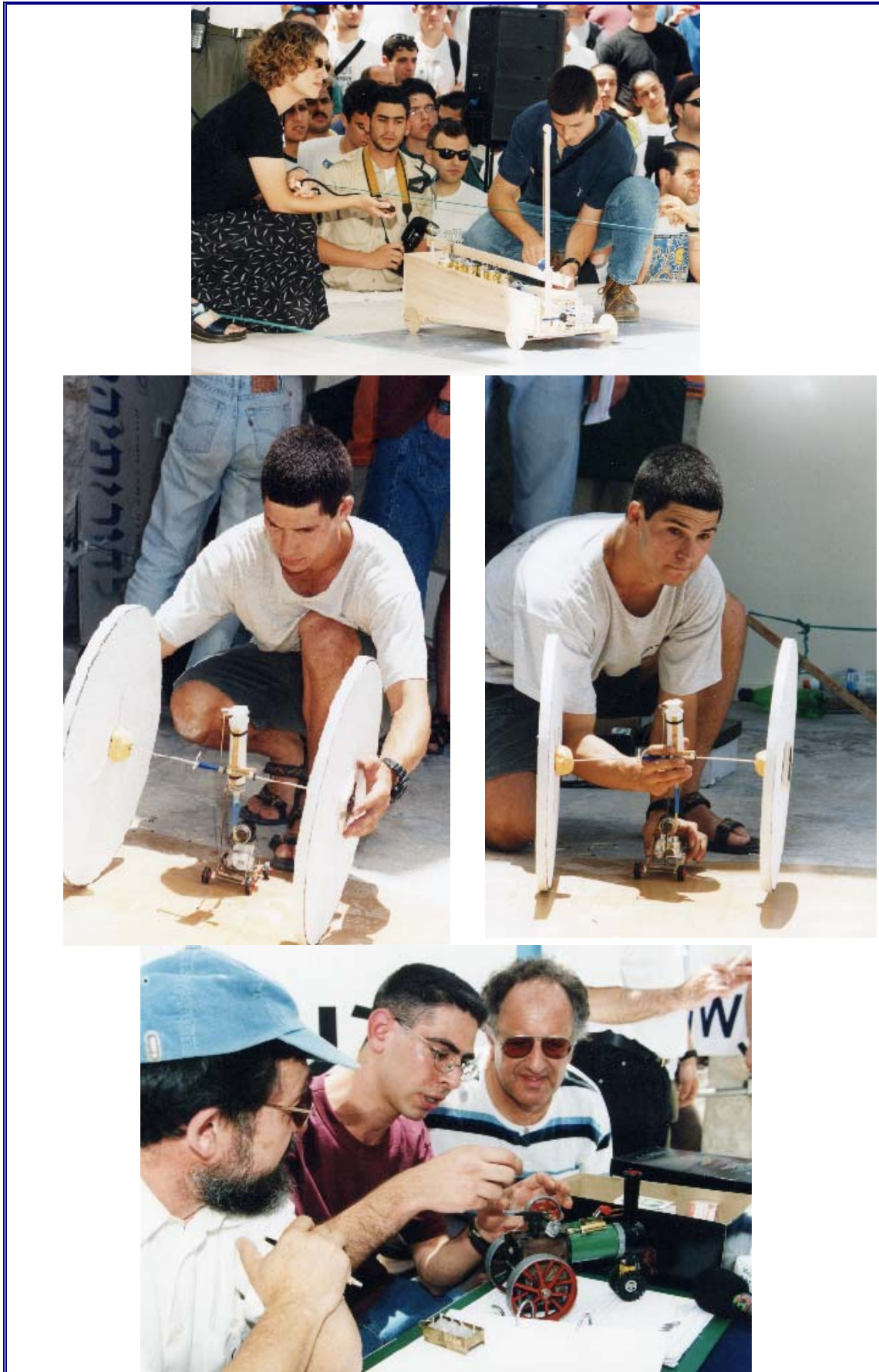


Captain Neev-Ya Durban

An aluminum vehicle propelled by a hydraulic piston fired by the two candles bolted the 14-meter course in 2 minutes and twelve seconds, followed 42 seconds later by a lightweight wood vehicle using a heat sink transferring the candle heat to electricity.



Mechanical engineering student Amir Finkelstein, first prize winner of the "CandleMobile" competition, ignites his CandleMobile.



Examples of other creative "CandleMobiles."



When Neev-Ya Durban graduated from the Technion in the summer of 1999, he was mobilized, completed an Officers Course with distinction, and served in the Aeronautical Design Department of the Israel Air Force, while continuing to study for a Master's Degree. During his military duty, Neev-Ya served as scientific leader of several key airborne projects. He died tragically, in 2003, as one of the victims of a terrorist attack while he was still in active service.

The success of these events, combined with the Technion's desire to comply with Neev-Ya's wish to have this marvelously creative activity become an annual Technion tradition, has prompted the Technion to formally establish the "TechnoBrain" Competition. It contained all the elements that embellish the engineering profession with creativity and attraction.

Statement of Need

Israel's economic stability and development depend, to a large extent, upon the utilization of modern technology to compete in the "global village" that comprises the developed world today. Fostering creative and imaginative thinking for developing modern, innovative technologies, the *raison d'être* of much of the research conducted in the Technion's 18 faculties and departments are the key to Israel's economic future, the welfare of its citizens and its deterrent and defensive capabilities. In addition, the strategic requirements for maintaining Israel's defensive capabilities are a function of her capability of exploiting modern technologies and high-tech innovations.

The Technion seeks to establish the **"TechnoBrain" Competition** as an annual event, to be held in two categories – one for Technion students, and a second for high school pupils (as a technique for attracting these pupils to innovative scientific and engineering technologies).

This unique competition will have a multiple objective: to inspire students to new levels of creativity and imagination, to enliven the Technion campus with an unusual, enjoyable and entertaining activity, and to add a different color to science.

Funding

An endowed fund of \$100,000 will provide an annual interest guaranteeing the regular organization, holding and proper publicizing of the **"TechnoBrain" Competition**. It would be a significant contribution towards stimulating interest in engineering and technology, fostering young talent, and, in the long run, promoting Israel's development, security and welfare.

Donor Recognition

The generous contribution will be recognized in the following manner:

1. The annual **"TechnoBrain" Competition** will be named for the donor, in perpetuity.
2. Annual reports and coverage of the **"TechnoBrain" Competition** will be sent to the donor.
3. The **"TechnoBrain" Competition** Fund will be listed in the "President's Report," the official annual report of the Technion.